tion of metronidazole (Flagyl). Dosages of 500 mg twice a day for seven days or 250 mg three times a day for seven days for both patient and partner are usually effective. The two-gram single dose that is commonly given for trichomoniasis is not considered sufficient therapy for gardnerella vaginitis. Patients taking metronidazole should be instructed not to consume alcoholic beverages during the treatment period.

There is no effective method available for the treatment of gardnerella vaginitis during pregnancy. The organism is not considered dangerous to the birth process.

Ongoing research will further advance the understanding and treatment of gardnerella vaginitis. Recent studies show that other organisms, particularly anaerobic bacteria, interact with *G vaginalis* to produce the discharge and odor. Researchers in family practice and other disciplines are studying treatment methods and it is hoped that alternatives will soon be available.

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Better Management of Asthma With Mini-Wright Peak Flow Meter

SINCE ARETAEUS first described asthma as "heaviness of the chest; sluggishness to one's accustomed work," the medical definition of asthma has continued to evolve. With the advent of the stethoscope, wheezing was added to the list of signs and symptoms of asthma. In modern times pulmonary function testing has defined asthma on a physiologic basis as "reversible airway obstruction." Evidence of general α-adrenergic hyperresponsiveness in circadian patterns of airway obstruction may allow redefinition of asthma in the future as an abnormality of central nervous system regulation of respiration.

Turner-Warwick has suggested new classifications for asthmatic patients on the basis of patterns of airway "host responsiveness." Using measurements of peak expiratory flow rate (PEFR), she was able to show the recurrence of three predictable patterns of airway obstruction: (1) brittle asthmatic, (2) morning dipper and (3) irreversible. She suggests that the measurement of PEFR to detect these patterns can be used to determine the timing and dose of bronchodilator medications. The PEFR patterns noted by Turner-Warwick may persist from weeks to years and can be modified by appropriately timed treatment guided by home PEFR recordings.

The "brittle asthmatic" condition is characterized by extreme variability of PEFR, analogous to the variability of continuous blood glucose measurements seen in brittle diabetes. The "morning dipper" pattern is characterized by a diurnal pattern of falling PEFR in the early morning. In the irreversible pattern, PEFR measurements over weeks and months reveal minimal diurnal variability, though a modest improvement in mean PEFR may be noted with regular use of bronchodilators or steroids. This pattern is frequently seen in severe chronic obstructive pulmonary disease (COPD).

The Mini-Wright Peak Flow Meter is a simple spring-loaded piston device that measures PEFR in liters per minute during maximal forced expiration. It has a reproducible 98 percent correlation with the standard Wright Peak Flow Meter. The instrument is widely used in Great Britain, and is available through an American distributor for approximately $60. Most patients, including small children, can learn in a few minutes to use the instrument and can make PEFR measurements at home.

Measurement of PEFR in the office, home or work place can be useful in diagnosing and treating airway obstruction. PEFR measurements before and after a challenge with bronchodilator in the office can be used as a diagnostic test for asthma. An increase of 15 percent or more in the PEFR is interpreted as evidence of reversible airway obstruction. Alternatively, a patient may be sent home with the meter to record PEFR four times a day for one or two weeks. Home measurements of PEFR, when correlated with symptoms, may aid in determining optimum timing and dosage of medications. Frequently, optimal dosing can be achieved without the expense of serum theophylline determinations. The need for chronic versus episodic use of bronchodilators may be determined using home PEFR measurements.

In some cases, patients may purchase a Mini-Wright Peak Flow Meter and learn to manipulate their own medication based on a PEFR sliding scale provided by their physician. This self-titration of medication promotes a sense of partnership with the physician and reduces an

illness-associated sense of helplessness in an asthmatic patient. Preliminary experience with the Mini-Wright Peak Flow Meter indicates that selected patients can use this PEFR sliding-scale regimen to improve daily control, resulting in fewer visits for emergency medical care and, perhaps, fewer admissions to hospital.

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Advanced Trauma Life Support

TRAUMA IS SURPASSED only by arteriosclerosis and cancer as the leading cause of death in the United States and is the leading cause of death in the first three decades of life. Primary care physicians are often responsible for the initial care of trauma victims.

Trauma care training previously had been carried out by preceptorship and lectures, neither of which allowed a "hands on" learning experience. Standards for resuscitation of a trauma victim such as those set forth by the American Heart Association for advanced cardiac life support (ACLS) did not exist before 1977. In 1977 a course in advanced trauma life support (ATLS) was developed and revised by the Lincoln Medical Education Foundation, Physicians' Committee on Trauma, Southeast Nebraska Emergency Medical Services, the American College of Surgeons, The University of Nebraska School of Medicine and a number of practicing surgeons. The course was presented statewide in Nebraska to practicing primary care physicians, who were overwhelmingly in favor of the format. As a result, improvement in the condition of severely injured patients was noted.

The ATLS course is quite similar in format to the ACLS course. It is designed for family practitioners and emergency room physicians. There are ten lecture and slide presentations and ten practical skill stations. With these skill stations and lectures, physicians learn various lifesaving techniques, such as chest tube insertion, pericardiocentesis, cricothyroidotomy, peritoneal lavage, application of an antishock garment, application of splints and spinal boards, radiographic interpretation, patient assessment, intravenous catheter placement technique, fluid replacement and endotracheal intubation with an emphasis on nasotracheal intubation. Students must show satisfactory knowledge and technical performance of these skills to their instructor to pass the course. Anesthetized dogs are used for teaching some of the invasive skills. The initial skill assessment station is particularly noteworthy in that it gives students a chance to practice their skills and to be tested on the ability to initially assess and treat a multiply injured patient. Well-coached persons with appropriate simulated injuries are used as patients for students to assess. The students review case histories and appropriate physical findings. The chaos of the typical emergency room is created by the "patients" and the supportive nursing staff. A student must systematically examine a patient, perform lifesaving interventions, order and interpret the appropriate laboratory and x-ray studies in a specified time; otherwise the "patients" will die of their injuries.

Instructor level courses are also available for those interested in teaching ATLS courses. At the University of California, Los Angeles (UCLA), the Family Practice Group has found this training especially useful for physicians in rural sites and an adjunct to ACLS courses for physicians with an active hospital practice. The ATLS course is now available nationally through several groups.

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Preoperative Preparation of Patients

ABOUT 18 YEARS AGO Egbert and co-workers reported that preoperative visits were beneficial in that they gave support and information to patients having elective surgical procedures. The study showed substantial reduction in the use of narcotics, earlier resumption of activities and shortened hospital stays in addition to subjective benefit. Other studies have suggested relaxation techniques taught to patients having an elective operation reduced incisional pain and the need for analgesics postoperatively. Furthermore, informing surgical patients about sensations that will be experienced during the perioperative period effectively reduced stress and the length of hospital stay.

Despite this evidence, routine preoperative